Notice of Allowability	Application No.	Applicant(s)	
	10/643,777	AN, WEI	
	Examiner	Art Unit	
	Chuong D. Ngo	2193	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *applicant's response filed on 09/17/2007*.

2. ☒ The allowed claim(s) is/are *1-5,7-20,22-36,38-56 and 59-70*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

/Chuong D Ngo/
Primary Examiner
Art Unit: 2193

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Applicant's representative, William R. McClellan, on 11/28/2007.

2. The application has been amended as follows:

The attached Listing of Claims have replaced all prior versions and listings of claims in the application.

3. The following is an examiner's statement of reasons for allowance:

The prior art of record does not teach or fairly suggest a generation of an offset sequence from a reference sequence by a first offset as recited in the claims including determining an initial state vector based at least in part on a mask associated with the first offset; and generating the offset sequence beginning at the initial state vector, wherein generating the offset sequence includes generating a plurality of bits of the offset sequence on each of a plurality of iterations, each of the plurality of iterations including providing i bits of the current state vector as a portion of the offset sequence, i having a value greater than 1, and computing a subsequent state vector advanced at least i states from the current state vector.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chuong D. Ngo whose telephone number is (571) 272-3731. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

07/28/20007

/Chuong D Ngo/
Primary Examiner, Art Unit 2193

LISTING OF CLAIMS

1. (Previously presented) A method of generating an offset sequence for use as a pseudo-random number (PN) code in a wireless communication, the method comprising acts of:

generating a reference sequence;

determining an initial state vector based at least in part on a mask associated with a first offset from the reference sequence, the initial state vector operating initially as a current state vector; and

generating the offset sequence beginning at the initial state vector, the offset sequence offset from the reference sequence by the first offset, wherein generating the offset sequence includes generating a plurality of bits of the offset sequence on each of a plurality of iterations, each of the plurality of iterations comprising acts of:

providing i bits of the current state vector as a portion of the offset sequence, i having a value greater than 1; and

computing a subsequent state vector advanced at least i states from the current state vector, the subsequent state vector operating as the current state vector for a next iteration of the plurality of iterations.

2. (Original) The method of claim 1, wherein the acts of generating the reference sequence and generating the offset sequence include generating the reference sequence and the offset sequence at different phases of a base sequence.

3. (Original) The method of claim 2, wherein the act of determining the initial state vector includes an act of determining the initial state vector based at least in part on a characteristic polynomial associated with the base sequence.

4. (Original) The method of claim 3, wherein the act of determining the initial state vector includes an act of multiplying the mask by the characteristic polynomial.

5. (Original) The method of claim 3, wherein the act of determining the initial state vector includes an act of determining the initial state vector based at least in part on a current state vector associated with the reference sequence.

6. (Canceled).

7. (Previously presented) The method of claim 1, wherein the act of computing the subsequent state vector includes computing the subsequent state vector based on the current state vector and a characteristic polynomial associated with the base sequence.

8. (Original) The method of claim 7, wherein the act of computing the subsequent state vector includes an act of computing the subsequent state vector based on at least one partial state vector associated with the current state vector and a truncated polynomial.

9. (Original) The method of claim 8, wherein the at least one partial state vector includes a first partial state vector and a second partial state vector and wherein the act of computing the subsequent state vector includes an act of computing a sum of the first partial state vector and a product of the second partial state vector and the truncated polynomial.

10. (Original) The method of claim 7, wherein i has a value based on an order difference of the characteristic polynomial.

11. (Original) The method of claim 7, wherein on each iteration, the act of computing a subsequent state vector includes an act of computing an expanded state vector having a number of bits simultaneously available greater than an order difference of the characteristic polynomial.

12. (Original) The method of claim 7, further comprising an act of expanding the characteristic polynomial to provide an expanded characteristic polynomial.

13. (Original) The method of claim 12, wherein the act of expanding the characteristic polynomial includes an act of expanding the characteristic polynomial such that an order difference of the expanded characteristic polynomial is greater than an order difference of the characteristic polynomial.

14. (Original) The method of claim 13, wherein i is equal to the order difference of the expanded characteristic polynomial.

15. (Original) The method of claim 12, wherein the act of expanding the characteristic polynomial includes at least one of applying coarse polynomial shaping, fine polynomial shaping and one-step polynomial reshaping.

16. (Previously presented) A computer readable medium encoded with instructions for execution on at least one processor, the instructions, when executed on the at least one processor, performing a method of generating an offset sequence for use as a pseudo-random number (PN) code in a wireless communication, the method comprising acts of:

determining an initial state vector based at least in part on a mask associated with a first offset from the reference sequence, the initial state vector operating initially as a current state vector; and

generating the offset sequence beginning at the initial state vector, the offset sequence offset from the reference sequence by the first offset, wherein generating the offset sequence includes generating a plurality of bits of the offset sequence on each of a plurality of iterations, each of the plurality of iterations comprising acts of:

providing i bits of the current state vector as a first portion of the offset sequence, i having a value greater than 1; and

computing a subsequent state vector advanced at least i states from the current state vector, the subsequent state vector operating as the current state vector for a next iteration of the plurality of iterations.

17. (Original) The computer readable medium of claim 16, wherein the acts of generating the reference sequence and generating the offset sequence include generating the reference sequence and the offset sequence at different phases of a base sequence.

18. (Original) The computer readable medium of claim 17, wherein the act of determining the initial state vector includes an act of determining the initial state vector based at least in part on a characteristic polynomial associated with the base sequence.

19. (Original) The computer readable medium of claim 18, wherein the act of determining the initial state vector includes an act of multiplying the mask by the characteristic polynomial.

20. (Original) The computer readable medium of claim 18, wherein the act of determining the initial state vector includes an act of determining the initial state vector based at least in part on a current state vector associated with the reference sequence.

21. (Canceled).

22. (Previously presented) The computer readable medium of claim 16, wherein the act of computing the subsequent state vector includes computing the subsequent state vector based on the current state vector and a characteristic polynomial associated with the base sequence.

23. (Original) The computer readable medium of claim 22, wherein the act of computing the subsequent state vector includes an act of computing the subsequent state vector based on at least one partial state vector associated with the current state vector and a truncated polynomial.

24. (Original) The computer readable medium of claim 23, wherein the at least one partial state vector includes a first partial state vector and a second partial state vector and

wherein the act of computing the subsequent state vector includes an act of computing a sum of the first partial state vector and a product of the second partial state vector and the truncated polynomial.

25. (Original) The computer readable medium of claim 22, wherein i has a value based on an order difference of the characteristic polynomial.

26. (Currently amended) The computer readable medium of claim 16 [[21]], wherein on each iteration, the act of computing a subsequent state vector includes an act of computing an expanded state vector having a number of bits simultaneously available greater than an order difference of a characteristic polynomial associated with the base sequence.

27. (Original) The computer readable medium of claim 22, further comprising an act of expanding the characteristic polynomial to provide an expanded characteristic polynomial.

28. (Original) The computer readable medium of claim 27, wherein the act of expanding the characteristic polynomial includes an act of expanding the characteristic polynomial such that an order difference of the expanded characteristic polynomial is greater than an order difference of the characteristic polynomial.

29. (Original) The computer readable medium of claim 28, wherein i is equal to the order difference of the expanded characteristic polynomial.

30. (Original) The computer readable medium of claim 27, wherein the act of expanding the characteristic polynomial includes at least one of applying coarse polynomial shaping, fine polynomial shaping and one-step polynomial reshaping.

31. (Previously presented) A computer readable medium encoded with instructions for execution on at least one processor, the instructions, when executed on the at least one processor, performing a method for use with a sequence generator having a plurality of states

adapted to produce an offset sequence for use as a pseudo-random number (PN) code in a wireless communication, the method comprising acts of:

receiving an input including a mask associated with a first offset of a reference sequence of the sequence generator; and

determining a first state of the plurality of states based on the input, the first state operating initially as a current state of the sequence generator, wherein when the first state is applied to the sequence generator, the offset sequence at the first offset from the reference sequence is provided, and wherein a plurality of bits of the offset sequence are generated on each of a plurality of iterations, each of the plurality of iterations including:

providing i bits of the current state of the sequence generator as a first portion of the offset sequence, i having a value greater than 1; and

computing a next state of the sequence generator advanced at least i states from the current state, the next state operating as the current state of the sequence generator on a next iteration of the plurality of iterations.

32. (Original) The computer readable medium of claim 31, wherein the act of receiving an input includes an act of receiving an input including a characteristic polynomial associated with the sequence generator.

33. (Original) The computer readable medium of claim 32, wherein the act of receiving the input includes an act of receiving an input including a current state of the sequence generator associated with the reference sequence.

34. (Original) The computer readable medium of claim 32, wherein the act of receiving the input includes an act of receiving an input including at least one pre-computed state of the sequence generator.

35. (Original) The computer readable medium of claim 32, wherein the act of determining one of the plurality of states includes an act of multiplying the characteristic polynomial by the mask.

36. (Original) The computer readable medium of claim 31, further performing an act of applying the first state to the sequence generator.

37. (Canceled).

38. (Previously presented) The computer readable medium of claim 31, wherein the act of computing the next state includes computing the next state based on the current state and a characteristic polynomial associated with the sequence generator.

39. (Original) The computer readable medium of claim 38, wherein the act of computing the next state includes an act of computing the next state based on at least one partial state vector associated with the current state and a truncated polynomial, the truncated polynomial truncated from the characteristic polynomial.

40. (Original) The computer readable medium of claim 39, wherein the at least one partial state vector includes a first partial state vector and a second partial state vector and wherein the act of computing the next state includes an act of computing a sum of the first partial state vector and a product of the second partial state vector and the truncated polynomial.

41. (Original) The computer readable medium of claim 40, wherein i has a value based on an order difference of the characteristic polynomial.

42. (Currently amended) The computer readable medium of claim 31 [[37]], wherein on each iteration, the act of computing the next state includes an act of computing an expanded state having a number of bits available that is greater than an order difference of a characteristic polynomial associated with the sequence generator.

43. (Original) The computer readable medium of claim 41, further comprising an act of expanding the characteristic polynomial to provide an expanded characteristic polynomial.

44. (Original) The computer readable medium of claim 43, wherein the act of expanding the characteristic polynomial includes an act of expanding the characteristic polynomial such that an order difference of the expanded characteristic polynomial is greater than an order difference of the characteristic polynomial.

45. (Original) The computer readable medium of claim 44, wherein i is equal to the order difference of the expanded characteristic polynomial.

46. (Original) The computer readable medium of claim 43, wherein the act of expanding the characteristic polynomial includes at least one of applying coarse polynomial shaping, fine polynomial shaping and one-step polynomial reshaping.

47. (Original) The computer readable medium of claim 31 in combination with a transceiver, the transceiver comprising:

a memory including the computer readable medium; and

a processor coupled to the memory, the processor adapted to execute the instructions encoded on the computer readable medium.

48. (Original) The combination of claim 47, in further combination with a plurality of transceivers, each of the plurality of transceivers comprising:

a memory including the computer readable medium; and

a processor coupled to the memory, the processor adapted to execute the instructions encoded on the computer readable medium.

49. (Original) The combination of claim 48, wherein at least one of the plurality of transceivers is a base station and wherein the memory includes a plurality of masks assigned to each respective other of the plurality of transceivers.

50. (Original) The combination of claim 48, wherein the memory of each of the plurality of transceivers includes a respective mask unique from masks of each other of the plurality of transceivers.

51. (Currently amended) A sequence generator implemented in software stored on at least one computer readable medium, the sequence generator configured to generate ~~for generating~~ an offset sequence for use as a pseudo-random number (PN) code in a wireless communication, the sequence generator comprising:

a first software component having a plurality of states, the first software component configured to generate a reference sequence and the offset sequence; and

a second software component adapted to receive at least one mask associated with an offset from the reference sequence, the second software component configured to determine an initial state from the plurality of states based at least in part on the at least one mask, the initial [[first]] state operating initially as a current state of the sequence generator, wherein when the first software component is operated from the initial state, the first software component generates the offset sequence offset from the reference sequence by the offset,

wherein the first software component is adapted to simultaneously provide at least two bits of the current state associated with the reference sequence as a portion of the offset sequence on each of a plurality of iterations of the sequence generator, and wherein the second software component is further adapted to compute a next state advanced from the current state by at least two of the plurality of states on each of the plurality of iterations, the next state operating as the current state in a next iteration of the plurality of iterations.

52. (Original) The sequence generator of claim 51, wherein the reference sequence and the offset sequence are produced at separate phases of a base sequence.

53. (Original) The sequence generator of claim 52, wherein when the sequence generator is transitioned through each of the plurality of states, a period of the base sequence is generated.

54. (Original) The sequence generator of claim 53, wherein the base sequence is a maximal length pseudo noise sequence.

55. (Currently amended) The sequence generator of claim 51, wherein the second software component is adapted to determine the initial state based at least in part on a characteristic polynomial.

56. (Currently amended) The sequence generator of claim 51, wherein the second software component is adapted to determine the initial state based at least in part on a current state of the first component associated with the reference sequence.

57. (Canceled).

58. (Canceled).

59. (Previously presented) The sequence generator of claim 51, wherein the number of bits provided simultaneously is equal to the number of states the next state is advanced from the current state.

60. (Previously presented) The sequence generator of claim 51, wherein at least one of the at least two bits and the at least two states are the same in number as an order difference of a characteristic polynomial associated with the sequence generator.

61. (Currently amended) The sequence generator of claim 51, wherein the second software component is adapted to increase a length of the plurality of states such that the at least two bits of the current state provided as the output sequence is increased in number.

62. (Currently amended) The sequence generator of claim 51, wherein the second software component is adapted to generate an expanded state associated with the current state of

the sequence generator associated with the offset sequence, the expanded state having a greater number of bits available simultaneously than each of the plurality of states.

63. (Original) The sequence generator of claim 62, wherein the expanded state is associated with an expanded characteristic polynomial having an order difference greater than an order difference of a characteristic polynomial associated with the sequence generator.

64. (Original) The sequence generator of claim 63, wherein the order difference of the expanded characteristic polynomial is increased from the order difference of the characteristic polynomial by applying at least one of course polynomial reshaping, fine polynomial reshaping, and one-step polynomial reshaping.

65. (Original) The sequence generator of claim 63, wherein the order difference of the expanded characteristic polynomial is a multiple of 8.

66. (Original) The sequence generator of claim 62, wherein the expanded state vector is determined based on a current state associated with the characteristic polynomial and an expansion operator associated with the characteristic polynomial.

67. (Currently amended) The sequence generator of claim 51, in combination with a transceiver, the transceiver comprising:

at least one processor coupled to the first component and the second software component;

a modem coupled to the processor, the modem adapted to modulate and demodulate data with the offset sequence provided by the first software component.

68. (Original) The sequence generator of claim 67, wherein the transceiver further comprises a memory for storing a mask associated with an offset of the reference sequence.

69. (Currently amended) The sequence generator of claim 51, in combination with a network, the network comprising a plurality of transceivers, each transceiver comprising:

at least one processor coupled to the first software component and the second software component;

a modem coupled to the processor, the modem adapted to modulate and demodulate data with the offset sequence provided by the first software component.

70. (Original) The sequence generator of claim 69, wherein at least one of the plurality of transceivers is a base station, the base station further comprising a memory for storing a plurality of masks associated with each other of the plurality of transceivers.

71-85 (Canceled).